

GILA RIVER BASIN

09448500 GILA RIVER AT HEAD OF SAFFORD VALLEY, NEAR SOLOMON, AZ

LOCATION.-Lat 32°52'06", long 109°30'38", in SE_{1/4}NE_{1/4} sec. 31, T.6 S., R.28 E., Graham County, Hydrologic Unit 15040005, on left bank 0.6 mi downstream from intake of Brown Canal, 8 mi northeast of Solomon, and 17 mi downstream from San Francisco River. Records include flow of Brown Canal, which is measured 2,000 ft downstream from intake.

DRAINAGE AREA--7.896 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Apr. 1914 to current year. Monthly discharge only for some periods, published in WSP 1313. Prior to Oct. 1932 and Oct. 1940 to Sept. 1949 published as "near Solomonsville" and Oct. 1932 to Oct. 1933 and May 1935 to Sept. 1940 as "below Bonita Creek near Solomonsville."

REVISED RECORDS--WSP 1059: 1914, 1916-17, 1923(M), 1924-25, 1927, 1929-31(M). WSP 1179: 1915, 1918-19(M). WSP 1313: 1934. WSP 1733: 1923.

GAGE.—Water-stage recorder. Datum of gage is 3,059.92 ft above sea level. Prior to July 8, 1980, at datum 4.96 ft higher. See WSP 1733 for history of changes prior to Jan. 1, 1941. Supplementary water-stage recorder and Parshall flume on Brown Canal.

REMARKS.-- Records good, except estimated daily discharges, which are poor. Records show water reaching head of Safford Valley and include water diverted to Brown Canal. Diversions above station for mining, municipal use, and for irrigation of about 17,500 acres, much of it by pumping from ground water.

COOPERATION.--Record for Brown Canal furnished by Gila Water Commissioner:

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 132,000 ft³/s Oct 2, 1983, gage height, 20.8 ft, from rating curve extended above 52,000 ft³/s on basis of slope-area measurements at 14 40 ft and 20 8 ft; minimum, 11 ft³/s, June 25, 1956.

EXTREMES FOR CURRENT YEAR --Peak discharges greater than base discharge of 4,000 ft³/s and (or) maximum (*) slope-area measurements at 14,400 ft and 20,080 ft, minimum, 11 ft; 7/30/25, 1950.

EXTREMES FOR CURRENT YEAR--Peak discharges greater than base discharge of 4,000 ft³/s and (or) maximum ().

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 8.....	1000	*2,780	*9.77

Minimum daily discharge, 38 ft³/s July 20.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	94	101	144	184	179	348	476	201	74	43	57	106
2	93	102	145	181	177	367	447	194	74	42	55	97
3	94	101	152	180	176	372	416	187	74	42	54	94
4	94	102	149	178	176	370	396	182	70	41	51	93
5	93	101	154	177	179	393	385	179	66	42	50	88
6	92	103	154	175	180	418	374	176	65	42	49	83
7	122	107	154	173	181	416	364	172	63	43	50	79
8	1110	111	158	174	187	413	351	166	64	43	59	85
9	360	112	161	177	192	423	337	161	63	43	54	79
10	227	113	161	179	190	436	327	152	61	42	50	77
11	176	112	161	180	188	450	323	149	61	40	49	110
12	145	112	160	177	186	473	317	144	62	41	51	119
13	127	113	163	179	191	484	305	137	58	40	52	99
14	116	115	162	181	217	476	292	132	59	41	53	84
15	106	116	161	181	335	477	289	123	57	41	55	76
16	104	116	160	182	294	479	299	116	56	39	56	73
17	101	118	161	182	260	496	298	113	56	e41	59	70
18	102	120	166	179	242	1080	291	106	56	e43	63	68
19	103	122	170	178	232	899	286	103	56	40	84	67
20	107	122	170	177	225	871	290	99	55	38	77	64
21	105	121	172	178	218	762	278	95	53	44	69	61
22	103	123	175	177	212	702	265	94	53	44	68	60
23	103	126	184	173	210	662	256	92	51	45	64	61
24	105	128	191	171	206	684	254	89	50	44	64	62
25	104	128	197	172	206	712	247	86	48	45	61	60
26	102	130	197	173	216	685	238	83	46	44	60	60
27	101	133	193	175	258	645	230	82	46	45	58	60
28	101	133	190	174	284	613	221	80	48	44	59	63
29	102	134	189	174	---	580	214	78	48	47	62	65
30	101	136	188	175	---	541	208	77	45	54	114	64
31	99	---	187	177	---	504	---	75	---	55	120	---
TOTAL	4692	3511	5229	5493	5997	17231	9274	3923	1738	1338	1927	2327
MEAN	151	117	169	177	214	556	309	127	57.9	43.2	62.2	77.6
MAX	1110	136	197	184	335	1080	476	201	74	55	120	119
MIN	92	101	144	171	176	348	208	75	45	38	49	60
MED	103	116	162	177	206	484	295	116	56	43	58	74
AC-FT	9310	6960	10370	10900	11900	34180	18390	7780	3450	2650	3820	4620
CFSM	0.02	0.01	0.02	0.02	0.03	0.07	0.04	0.02	0.01	0.01	0.01	0.01

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1921 - 2003, BY WATER YEAR (WY)

MEAN	384	277	514	697	741	853	576	300	107	203	496	389
MAX	7447	2230	5798	13990	5509	3629	2775	2038	716	736	2499	2081
(WY)	1984	1979	1979	1993	1993	1991	1973	1973	1992	1921	1923	1975
MIN	39.9	48.6	60.1	92.8	102	82.3	63.8	37.8	19.7	43.2	62.2	35.9
(WY)	1957	1957	1957	1954	1954	1971	1971	1956	1956	2003	2003	1956

SUMMARY STATISTICS

FOR 2002 CALENDAR YEAR

FOR 2003 WATER YEAR

WATER YEARS 1921 - 2003

ANNUAL TOTAL	53577		62680				
ANNUAL MEAN	147		172		461		
HIGHEST ANNUAL MEAN					2229		1993
LOWEST ANNUAL MEAN					101		1951
HIGHEST DAILY MEAN	4040	Sep 12	1110	Oct 8	90000	Oct 2	1983
LOWEST DAILY MEAN	30	Jun 26	38	Jul 20	13	Jun 25	1956
ANNUAL SEVEN-DAY MINIMUM	31	Jun 26	40	Jul 11	15	Jun 22	1956
ANNUAL RUNOFF (AC-FT)	106300		124300		334000		
ANNUAL RUNOFF (CFSM)	0.019		0.022		0.058		
10 PERCENT EXCEEDS	179		368		968		
50 PERCENT EXCEEDS	116		122		176		
90 PERCENT EXCEEDS	44		49		64		

e Estimated

GILA RIVER BASIN
09448500 GILA RIVER AT HEAD OF SAFFORD VALLEY, NEAR SOLOMON, AZ—CONTINUED
WATER-QUALITY RECORDS

PERIOD OF RECORD.--Jan. 1976 to Oct. 1981, Oct. 1988 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instan-	Baro-	Dis-	pH,	Specif.	Hard-	Noncarb					
		taneous dis- charge, cfs (00061)	metric Tur- bidity, NTU (00076)	solved pres- sure, mm Hg (00025)	Dis- solved oxy- gen, mg/L (00300)	solved percent of sat- uration (00301)	solved water, unfltrd percent field (00400)	conduc- tance, uS/cm std (00095)	Temper- ature, deg C (00020)	water, unfltrd mg/L as CaCO ₃ (00900)	water, unfltrd mg/L as CaCO ₃ (00904)	hard- ness, mg/L as CaCO ₃ (00915)	
NOV 13...	1210	108	7.3	686	10.8	114	8.5	1200	18.0	13.1	240	62	71.0
MAR 27...	1355	628	92	674	8.6	99	8.3	502	24.0	16.4	130	--	36.0
JUN 19...	1130	56	4.2	678	7.8	109	8.3	1410	31.5	26.0	240	110	69.0
SEP 10...	1110	74	560	683	7.0	95	8.2	1260	26.5	24.6	240	60	71.0
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Date		Magnes-				Alka-				Residue			
		Calcium water unfltrd recover -able, filtred, mg/L (00916)	Magnes- ium, water, unfltrd recover -able, filtred, mg/L (00925)	Potas- sium, water, recover -able, filtred, mg/L (00935)	Sodium adsorp- tion ratio (00931)	Sodium, water, unfltrd ratio mg/L (00930)	Sodium, water, unfltrd mg/L as CaCO ₃ (39086)	Wat tit inc tit field, titr., mg/L as field (00453)	Bicar- bonate, wat tit incr. tit field, titr., mg/L as field (00452)	Carbon- ate, wat tit incr. tit field, titr., mg/L as field (00452)	Chlor- ide, water, unfltrd mg/L (00940)	Fluor- ide, water, unfltrd mg/L (00950)	Sulfate sum of consti- tuents mg/L (00945)
NOV 13...	73.0	15.0	15.0	7.30	4	140	176	200	8	220	1.3	85.0	646
MAR 27...	42.0	9.30	12.0	3.30	2	48.0	132	159	1	52.0	.8	29.0	258
JUN 19...	71.0	16.0	16.0	9.90	5	170	131	157	1	290	1.3	99.0	734
SEP 10...	89.0	14.0	21.0	8.90	4	150	174	203	5	230	1.4	83.0	663
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Date		Residue on total		Ammonia + org-N, water, unfltrd sus- pended, mg/L (00530)		Ammonia water, unfltrd mg/L (00625)		Nitrite + nitrate Ammonia water, unfltrd mg/L as N (71845)		Organic nitro- gen, water, unfltrd mg/L as N (00630)	Phos- phorus, water, unfltrd mg/L (00605)	Total nitro- gen, water, unfltrd mg/L as NO ₃ (71887)	COD, high level, water, unfltrd mg/L (00340)
		Residue water, filtred, 180degC tons/ acre-ft (70303)	evap. at deg. C, wat flt mg/L (70300)	sus- pended, mg/L (00625)	Ammonia water, unfltrd mg/L (00610)	Ammonia water, unfltrd mg/L as N (00610)	Ammonia water, unfltrd mg/L as N (00630)	Nitrite + nitrate Ammonia water, unfltrd mg/L as N (00630)	Organic nitro- gen, water, unfltrd mg/L as N (00630)	Phos- phorus, water, unfltrd mg/L (00605)	Total nitro- gen, water, unfltrd mg/L as NO ₃ (71887)	E coli, high MF, water, unfltrd mg/L (00340)	
NOV 13...	.96	709	15	<.20	--	<.01	.100	--	.04	--	--	6	E8k
MAR 27...	.43	316	143	1.4	.01	.01	.180	1.4	.24	1.6	7.0	6	73
JUN 19...	1.10	807	9	<.20	--	<.01	<.020	--	.02	--	--	<5	E14k
SEP 10...	1.01	743	400	.90	.06	.05	.470	.85	.62	1.4	6.1	6	E98k
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Date		Anti- mony, water, filtred, ug/L (01095)				Barium, water, unfltrd recover -able, filtred, ug/L (01097)				Beryll- ium, water, unfltrd recover -able, filtred, ug/L (01000)			
		Arsenic water, filtred, ug/L (01000)	Arsenic water, unfltrd ug/L (01002)	Barium, water, unfltrd ug/L (01005)	Barium, water, unfltrd ug/L (01007)	Beryll- ium, water, unfltrd recover -able, filtred, ug/L (01010)	Beryll- ium, water, unfltrd recover -able, filtred, ug/L (01012)	Boron, water, unfltrd recover -able, filtred, ug/L (01020)	Boron, water, unfltrd recover -able, filtred, ug/L (01022)	Cadmium water, unfltrd ug/L (01025)	Cadmium water, unfltrd ug/L (01027)	Chrom- ium, water, unfltrd ug/L (01030)	
NOV 13...	<1	<1	4	4	55.0	58.0	<1	<1	120	122	<.5	<.5	<1
MAR 27...	<1	<1	3	2	21.0	60.0	<1	<1	46	49	<.5	<.5	<1
JUN 19...	<1	<1	4	3	57.0	60.0	<1	<1	143	143	<.5	<.5	<1
SEP 10...	<1	<1	4	9	83.0	170	<1	<1	127	136	<.5	<.5	<1

GILA RIVER BASIN

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09448500 GILA RIVER AT HEAD OF SAFFORD VALLEY, NEAR SOLOMON, AZ—CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Chrom- ium, water, unfltrd recover -able, ug/L (01034)	Copper, water, unfiltrd recover -able, ug/L (01040)	Iron, water, unfiltrd recover -able, ug/L (01042)	Lead, water, unfiltrd recover -able, ug/L (01046)	Mangan- ese, water, unfiltrd recover -able, ug/L (01049)	Mercury water, unfiltrd recover -able, ug/L (01055)	Nickel, water, unfiltrd recover -able, ug/L (01065)
NOV 13...	<1	<2	4	<2	334	<2	<1
MAR 27...	3	2	16	3	3060	<2	<.1
JUN 19...	<1	<2	3	<2	177	<2	<.1
SEP 10...	8	<2	33	<2	8190	<2	1
							16
Date	Selen- ium, water, filtrd, ug/L (01145)	Selen- ium, water, unfiltrd ug/L (01147)	Silver, water, unfiltrd fltrd, ug/L (01075)	Silver, water, unfiltrd recover -able, ug/L (01077)	Stront- ium, water, unfiltrd recover -able, ug/L (01082)	Zinc, water, unfiltrd recover -able, ug/L (01090)	Sus- pended sediment concen- tration mg/L (80154)
NOV 13...	<1	<1	<1	<1	830	<2	14
MAR 27...	<1	<1	<1	<1	330	<2	254
JUN 19...	<1	<1	<1	<1	930	<2	1.1
SEP 10...	<1	1	<1	<1	1010	<2	95

Remark codes used in this report:

< -- Less than
E -- Estimated value

Value qualifier codes used in this report:

k -- Counts outside acceptable range